

Thirteenth Annual
**Explosives
Safety Seminar
Biographies**



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The Armed Services Explosives Safety Board

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Washington, D. C.

BIOGRAPHIES

This booklet contains biographies of some of the principal participants at the seminar. They are arranged in alphabetical order. It is regretted that there are some omissions due to long lead time required by the printers.



Dr. M. Taylor Abegg
Vice President, R&D
IRECO Chemicals
Salt Lake City, Utah

Education: PhD, University of Utah,
1955. Dissertation: "Isothermal Decom-
position of Explosives."

Experience:

University of California, Lawrence
Radiation Lab, Livermore, California,
Aug 1955 to Dec 1959, Group Leader,
Explosive Projects.

Sandia Laboratories, Albuquerque, N. M.,
Dec 1959 to Jun 1971, Department Manager,
Electrochemical & Explosives Department

IRECO Chemicals, Salt Lake City, Utah,
Jun 1971 to present, Vice President,
Research and Development.

Married and has eight children.



Irving B. Akst
Director of Development
Mason & Hanger - Silas Mason Co.
Pantex AEC Plant, Amarillo, Texas

Early years in New York. Service in the U. S. Air Force (pilot); still in Reserve. Education in New York, West Texas State University, and Texas University. Past 10 years, Director of Development, Mason & Hanger - Silas Mason Co., Inc. Research, development and specialized fabrication of explosives.

CAPT Jacob C. Armstrong
Civil Engineering Division
Air Force Weapons Laboratory
Kirtland AFB, New Mexico



CAPT Armstrong is presently engaged in the studying of weapons effect against protective structures, evaluation of the passive protection provided by aircraft shelters and evaluating the effectiveness of the aircraft armored steel closures. His military schooling included courses in engineering at the University of New Hampshire, and at the Base Civil Engineer School, Wright-Patterson AFB. He is a graduate of the U.S. Military Academy and received his MSCE at the University of New Hampshire. During his military career he has been assigned to the Base Civil Engineering Squadron, McChord AFB and to the Hq, 7th AF, Civil Engineering, Saigon prior to his present assignment.

Mrs. Georgia R. Bachman
Editorial Research Assistant, ASES



Mrs. Bachman joined the ASES in 1964. Along with her Research Analyst duties Mrs. Bachman supervises the clerical employees of the Board Secretariat. During her Government career she has worked with the Air Force Training Command, Office of the Adjutant General, Department of the Army, and Headquarters, U. S. Air Force. She also has worked as secretary for academic officials in the secondary and college level educational fields.

Norris D. Bachtell
Safety Engineer, ASESB



Mr. Bachtell came to the Armed Services Explosives Safety Board in January 1959. He was previously with the U. S. Army in the field of explosives safety at storage depots, production plants and at the Field Safety Office of the Office, Chief of Ordnance.

During his tenure with the ASESB he has primarily been engaged in the surveying of Army, Navy and Air Force activities worldwide to determine compliance with ammunition and explosives safety standards. He has also been engaged in other aspects of the Board's activities.

Mr. Bachtell attended Maryland State Teachers College receiving a degree in teaching. Postgraduate courses in mathematics and history were taken at Western Maryland College, Westminster, Md. and Weber College, Ogden, Utah. In addition, he attended many service schools relating to explosives safety

and was an instructor at the Chief of Ordnance Safety School located at Charlestown, Indiana. His career in explosives safety extends over a 28 year period. He is a recipient of the Decoration for Meritorious Civilian Service.

Colonel Ferdinand Barnum
Headquarters, U. S. Air Force



Colonel Ferdinand Barnum, MC, has been Chief of the Life Sciences Group, Directorate of Aerospace Safety, a Pentagon-level arm of the Deputy Inspector General for Inspection and Safety, Headquarters, US Air Force since June 1970. His offices are located at Norton AFB, San Bernardino, California.

Colonel Barnum took his undergraduate training at the University of Delaware, Newark, Del. entering the Temple University School of Medicine in 1943 at the end of his junior year. Upon graduation from Temple in 1946, he spent 15 months in internship at Allegheny General Hospital, Pittsburgh, Pa.

Following an orientation course at the Medical Field Service School, Fort Sam Houston, he served a tour of duty as

Public health Officer on military government teams in Yamagata and Akita, Japan. Having transferred upon returning from overseas in 1950, he was assigned to the hospital at Bolling AFB, Washington, D. C.

In 1951, he entered the School of Aviation Medicine, Randolph AFB, in what later developed as the Residency Training Program in Aerospace Medicine. Phase II of the residency was at the Johns Hopkins School of Hygiene and Public Health and Phase III at Langley AFB, Va. Then followed assignments as Chief, Aerospace Medicine, Headquarters Second Air Force, Headquarters Strategic Air Command, Barksdale AFB; and Commander of USAF Hospitals at Pepperrell AFB, Newfoundland, and Hamilton AFB, Calif. (Aerospace Defense Command).

In 1962, he was assigned to the USAF School of Aerospace Medicine to become Chief, Education and Training Division. The year 1965 found him off to South Vietnam to organize and later command the 12th USAF Hospital, Cam Ranh Bay Air Base. Upon his return to the Continental United States, he served as Chief, Professional Division, Office of the Surgeon, Headquarters Airlift Command, from 1966 to 1970.

Colonel Barnum is a Diplomate of the American Board of Preventive Medicine in Aerospace Medicine, a Fellow of the American College of Preventive Medicine, and a member of the Society of USAF Flight Surgeons.

Charles A. Breeding
Safety Engineer, ASESB

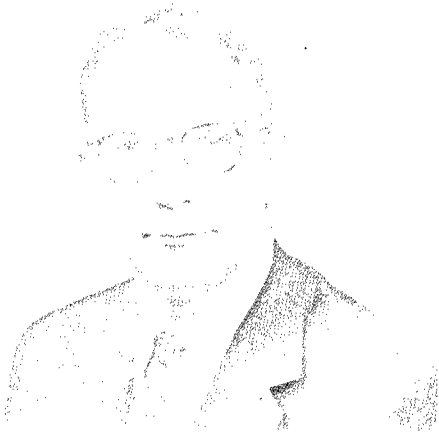


Mr. Breeding is a native of Sparta, Tennessee, educated in the public schools of Tennessee, and majored in Chemistry at the Tennessee Technological University.

He has over 29 years of Government service, all in the field of explosives safety, which began with the U. S. Army Ordnance Department. Subsequent to joining the ASESB, he had served at a number of Army installations as well as USAF Eighth Air Force and Hq U. S. Air Force, Washington, D. C. At Hq USAF he served as Chief of Explosives Safety and Surveillance and also was the Alternate Air Force Member of the ASESB.

During his tenure with the Explosives Safety Board he has been actively engaged in all aspects of the Board's activities.

Manuel Briskin
Office of General Counsel (Logistics)



A graduate of Cornell University, 1957 and Cornell Law School, 1959. Formerly a member of the Office of General Counsel, Navy Department from 1960 to 1968; with the Bureau of Naval Weapons as a facilities and procurement lawyer for the Polaris program; and with the Naval Facilities Engineering Command as the Navy's utilities lawyer and as a trial attorney. Presently with the Office of General Counsel (Logistics), Department of Defense as Counsel to the Office of the Assistant Secretary of Defense (Installations and Logistics), particularly to the Deputy Assistant Secretary (Installations and Housing) and his staff.

Billings Brown



Related Experience: 13 years in solid rocket propulsion and missile systems, about 5 years in the evaluation of the explosive hazards of solid propellants. Worked for the Boeing Company, the Institute of Defense Analyses, and Hercules Incorporated.

10 years in teaching engineering courses and directing research at three Universities.

Education: PhD in physical chemistry and chemical engineering from the University of Washington.

COL William Cameron III, USAF
Chairman, ASES



Col Cameron is currently the Chairman of the Armed Services Explosives Safety Board which is statutory having been formed by an Act of Congress in 1928 and is responsive to the Secretary of Defense. Col Cameron was born in Scotland and immigrated to the United States at an early age. He attended Northwestern University, 1940-1941; Florida State University, 1954-1957. Joined the Royal Canadian Air Force in 1941 as a fighter pilot. Upon entry of the U.S. into WW II, Col Cameron transferred to the Army Air Corps where he served until the war's end. In civilian life he was employed with a commercial airline as an executive and pilot, and in addition was a pilot in the Illinois National Guard. In 1948 he was recalled to active duty with the USAF for the Berlin Airlift. Since that time his assignments have been many and varied all of which have involved flying and explosives. He flew a combat tour in B-29s

during the Korean conflict (1951-1953) while serving as Director of Armament, 19th Bomb Wing, Okinawa; armament Officer, 6570th Chemical & Ordnance Test Group, Aberdeen Proving Ground, Md. (1953-1954); Chief of Armament, Hq, AF Armament Center, Eglin AFB, Fla. (1954-1958); Chief, Scientific & Technical Liaison Office, U.S. Naval Propellant Plant, Indian Head, Md. (1958-1962); and was the U.S. representative to the Tri Partite meetings in London, England on Explosives Ordnance Disposal. Some of his other duties have included Air Attache to Canada with additional duty as pilot for the U.S. Ambassador (1963-1965), and Commander, Research & Development Munitions Activity, Eglin AFB, Fla. (1965-1968). His most recent assignment prior to duty on the Explosives Safety Board was as Director of Airmunitions and Senior Explosives Ordnance Disposal Officer in Vietnam (1968-1969). He also flew combat missions. He wears Command Pilot Wings, Master Explosive Ordnance Disposal Badge, Master Missileman Badge, and Office, Secretary of Defense Identification Badge. Col Cameron is a graduate of the Air War College (1968); Nuclear & Chemical, Biological, Radiological courses (1955, 1956, 1966); Explosive Ordnance Disposal School (1958); Air Command and Staff College (1954); Air Tactical School (1952); Armament Systems Officers' School (1950); Flexible Gunnery School (1943); and Pilot Training (1941). Col Cameron is a member of the Executive Committee of the American Ordnance Association and a member of the Executive Committee of the National Safety Council. Col Cameron is married to the former Betty J. Amberg also of Chicago, Illinois. They have five children; two married daughters and three sons attending school.



Frank H. Christ
Army Ordnance

Mr. Christ was born 22 February 1926 at Chambersburg, Pennsylvania.

Education: Elementary and High School at Chambersburg, PA. Bucknell University at Lewisburg, PA. He served in the U. S. Navy from April 1944 through March 1946. He is presently with Army Ordnance, GS-14.

Mr. Christ has received several sustained Superior and Outstanding Performance Ratings, also one invention disclosure in 1946.

Organizations: National Rifle Association - Life member. Church - Very active in Church functions. Armed Forces Management Association - Past President of Stansbury Chapter 61.



LTC John D. Coder, USA
Director of Plans & Policies
ASESB, Secretariat

LTC John D. Coder completed his Reserve Training at the University of Nebraska and was commissioned a 2nd LT in 1953. After being schooled in Ammunition Logistics he was assigned to an ammunition Company in Korea and served as platoon leader and storage officer of Depot 051. He transferred to the Japan Ordnance Command, Yokohama, Japan in 1955, and worked in the Ammunition Division of the Headquarters.

In 1957 he was ordered to Fort Sill, Oklahoma and joined an Ordnance Special Weapon Maintenance Battalion. After receiving special weapons training and serving in various positions in the organization he deployed with the unit

to Germany in 1959. He spent the next 4 years in Europe as the Special Weapon Shop Officer of the 64th Ordnance Company, then Special Weapon Shop Officer of the 529th Ordnance Company and the last year as the Maintenance Officer of the Advanced Weapons Support Command, Pirmasens, Germany. During this period, he received a Bachelor of Science Degree in Military Science and a commission in the Regular Army. In 1963 LTC Coder completed the Ordnance Officers Career Course at Aberdeen Proving Ground, Maryland then commanded the 5th Enlisted Training Company at the same station. He attended Syracuse University in 1964 where he completed the Army Comptrollership Course and received a Masters Degree in Business Administration. From Syracuse he was assigned to Washington, D. C. where he served as a Personnel Management Officer in the Office of Personnel Operations. In 1967 he attended the Associate Course at the Command and General Staff College and was subsequently reassigned to Washington as a Personnel Staff Officer in the Office of the Deputy Chief of Staff for Personnel. LTC Coder was ordered to Vietnam in 1969 where he commanded the 3rd Ordnance Battalion (Ammunition) for seven months and completed his tour as the Deputy Chief of Staff for Ammunition, 1st Logistical Command. He has been the Army Staff Representative to the Armed Services Explosives Safety Board since 1970.

LTC Coder is married to the former Ruth A. Woest of Nebraska City, Nebraska and has a daughter, Elaine.

John W. Connelly
Explosives Safety Coordinator
Department of the Navy



Mr. John W. Connelly is Explosives Safety Coordinator for the Office of the Chief of Naval Operations, Department of the Navy. He holds a B.S. Chem. degree from Loyola University, New Orleans, Louisiana, and an M.S. from Georgetown University, Washington, D. C. Prior to WWII he worked as a chemist in the cement and roofing materials industry, then as Inspector of Powder and Explosives in an Army Ammunition loading plant. During WWII Mr. Connelly served in the U.S. Coast Guard as a commissioned officer, with the Coast Guard Explosive Loading Details in Norfolk, Mobile, and New Orleans. Upon release in 1946 he was employed by the Office of the Chief of Naval Operations to oversee and regulate the safe return of munitions from overseas areas. In

1948 his responsibilities were expanded to include administration of the Navy's ammunition logistics and explosives safety programs, and he has worked in these fields since that time.

Thomas W. Davidson
US Army Missile Command



Mr. Thomas W. Davidson is Chief, Safety Office, US Army Missile Command. He began his federal career at the Hoosier Plant of Indiana Arsenal in 1941. After service in the South Pacific with US Navy Seabees he returned to Indiana Arsenal where he entered in the safety field in 1947. He served as Safety Director for Jefferson Proving Ground from 1949 to 1958 gaining much experience in R&D testing. In 1958 he transferred to Redstone Arsenal as a safety engineer in the propellant manufacturing and research fields. In 1964 he became Chief of the US Army Missile Command Safety Office with responsibility for both the weapons system safety effort and the Command safety program.

Mr. Davison was born in Tennessee but considers Paducah, Kentucky his home town. He is married to the former Margaret Yarbrow of that city. They have 3 children. He is a graduate of Paducah Jr. College.

Mr. Davidson helped pioneer the system safety program within the Army. He has served as chairman of the Solid Propellant Manufacturing, Storage and Handling Committee of the JANNAF Hazards Working Group. For his outstanding work in the safety field he has received the Federal Safety Council Award of Merit.



Paul D. Davis
Safety Engineer
National Aeronautics &
Space Administration
Washington, D. C.

Mr. Davis received his Bachelor of Science Degree in Chemistry and Mathematics from Murray State University, Murray, Kentucky in 1960. Mr. Davis worked as an explosive research engineer for Universal Match Corp. for two years after graduation. He joined NASA at Cape Kennedy in 1963 as an ordnance engineer, and assisted in the development of the explosive system for the Gemini spacecraft. He moved to spacecraft operations in 1966 and was the assistant spacecraft test conductor for the first Lunar Module flown. Mr. Davis transferred to the Apollo Program Office in Washington in June 1968 where he served as a staff engineer for operations. He was reassigned to the NASA Safety Office in October 1970 and is presently responsible for propellants, explosives and hazardous chemicals for NASA.



Walter C. Day
Army Engineer Explosive Excavation Research
Livermore, California

Mr. Walter C. Day is presently Deputy Director (Civil program) of the US Army Engineer Explosive Excavation Research Office, Livermore, California. He has served with the Group, and its predecessor the Nuclear Cratering Group, since 1964, first as Chief of the Radiological Safety Division and subsequently as Technical Advisor, and Technical Director. He was previously employed by the Lawrence Radiation Laboratory, Livermore, CA., as a Health Physicist, and prior to that by NASA's Lewis Research Center as a Health Physicist. Mr. Day is 37 years old, attended Earlham College, Richmond, Indiana, received an AB degree as a physics major in 1956, and was a radiological physics fellow at the University of Washington, Seattle, during 1956-57.

Mr. Day resides in Livermore with his wife Gretchen and their three children, David, Robin and Leslie.

Melvin L. Dunn
Safety Engineer, ASES

Mr. Dunn's principal duties are to perform safety surveys, investigate accidents, conduct studies and analysis of matters relating to explosives safety.

Mr. Dunn's education and self-development includes training at various service schools, Jamestown College, N. D. and the University of Southern California on such subjects as ammunition and explosives, armament, fire control systems, nuclear weapons, missiles, flying, navigation, aerial gunnery, safety, management, etc.

His government service spans 29½ years which includes 2½ years in the Army Air Force during WW II, 3½ years with the U. S. Army Ordnance Corps, 15½ years with the U. S. Air Force and 8 years with the ASES.

Mr. Dunn has been decorated for exceptional civilian service which is the highest civilian award that the Service Secretaries bestow.

He holds a commercial pilots license and is a certified flight instructor. His hobbies are photography and flying.





Donal E. Endsley
Headquarters U. S. Air Force

Donal E. Endsley, GS-14, is Chief of the Standards and Technical Section and Senior Explosives Safety Advisor to the Chief of the Explosives Safety Branch, Directorate of Aerospace Safety, Headquarters U. S. Air Force. The organization is a field agency of the Air Staff in the Pentagon and is located at Norton Air Force Base, San Bernardino, California.

Mr. Endsley provides administrative and staff level management of the Explosives Safety Branch which has worldwide responsibility for Air Force policies, plans, and procedures for the USAF Explosives Accident Prevention Program.

He has 29 years of experience in the Army and Air Force Explosives safety business - ranging from production, research and development, testing, logistics,

surveillance, quality control, renovation and demilitarization.

Mr. Endsley has been assigned to the Air Staff since July 1956. He served five of these years in Washington, D. C. during which he also served as the Alternate Air Force Member on the Armed Services Explosives Safety Board.

He was stationed with the Northeast Air Command as Explosives Safety and Supply Officer, February 1954-July 1956, and helped to pioneer new techniques and procedures in the use of explosives items required for ice cap explorations and harbor clearance in Greenland, Baffin Island, Labrador, and Newfoundland. This work was pre-engineering exploration for construction of current radar systems.

From June 1950 to February 1954, he was Chief of Surveillance at the Sioux Ordnance Depot, Sidney, Neb., and from December 1947 to June 1950 was assigned to Louisiana Army Ordnance Plant as Chief Ammunition Inspector. For 22 months prior, he served as Assistant Chief Ammunition Inspector at the Red River Arsenal, and Lone Star Ordnance Plant, Texas.

Mr. Endsley served 16 months with the Army's 30th Infantry Division during World War II, including one year in the European theater. He participated in two campaigns, earning the Purple Heart and Presidential Unit Citation.

Employment prior to his military service included jobs as an ammunition inspector with the Army Service Forces in San Francisco and at the Savanna, Ill., Ordnance

Depot, budget manager of an auto supply store, school teacher, and dairy products production manager and engineer.

Mr. Endsley was born and reared at Richmond, Mo., where he graduated from high school in 1937. He majored in the chemical and physical sciences from 1937 to 1940 at Central Missouri State College in Warrensburg. He also has studied general elective courses at George Washington University, Washington, D. C., and has attended numerous Army and Air Force technical schools.

Recipient of the Meritorious Civilian Service Award in 1955, he has participated in the development of numerous DOD instructions and tri-service technical orders. He is a charter member of Alpha Phi Omega, National Scouting Fraternity, and belongs to the National Ordnance Association, Phi Sigma Epsilon, and the Free and Accepted Order of Masons.

Mr. Endsley is married to the former Cecile C. Petree of Richmond, Mo., and they reside at 5640 Dumbarton Ave., San Bernardino, Calif. They have three sons, Donal E. Jr., Sterling W., and Richard K.

Dr. Erich A. Farber
Director, Solar Energy & Conversion Lab
University of Florida
Gainesville, Florida



Dr. Farber has pioneered in the fields of heat transfer, fluid flow and energy conversion. He has built the Solar Energy Laboratory at the University of Florida into one with International Reputation and has lead a team in fundamental research for NASA on Liquid Rocket Propellant Characteristics, which influenced some of our largest rocket designs. He has over 200 publications, co-authored 3 books, and received many honors, among them a citation from the Air Force for his work in Solar Energy Conversion; the Worcester Reed Warner Gold Medal from the American Society of Mechanical Engineers for "Outstanding Contributions to the Permanent Literature of Engineering;" The Missouri Honor Award, a Gold Medal and Citation for "Distinguished Service in Engineering;" listed in the Engineers Joint Council "Engineers of Distinction;" in "Outstanding Floridians;" Who is Who in the World; World Who is Who in Science; Leaders in American Science; American Men of Science, etc. He received a number of Scholarship Awards, developed the "Boiling Curve" in

heat transfer, which is quoted in all books on heat transfer, developed a method of heat transfer surface treatment which is referred to in the literature as "Farberizing." He was awarded the Wisconsin ASEE Technical Paper Award, Best Teacher Award and has been invited by many foreign Governments at their expense, to visit and consult with them. He also is consultant to many industries and U. S. Government Agencies. Dr. Farber was just made a Fellow in the American Society of Mechanical Engineers.

G. L. Feazell
Alternate Army Member, ASESB



Currently the Director of Safety, U. S. Army Materiel Command, serving in this position since December 1967. He has been engaged in accident prevention for 25 years. Background ranges from managing safety program in research, development and manufacturing to worldwide, Army-wide interests of the Army safety program. Is recognized as a pioneer in radiological safety, credited with developing the specialized safety and health physics activities in processing uranium during his work as Safety Director of the gaseous diffusion plants at Oak Ridge, Tennessee. Developed and established three firsts in specialized safety training, namely, Radiological Safety, Fort McClellan, Ala.; Laser Safety, University of Cincinnati; and a Masters Degree, Safety Engineer Program, at Texas A&M. Conceived and installed the present safety verification system utilized throughout USAMC commands to assure safety development in materiel from design through expenditure and disposal.

Majored in Chemistry at King College, Bristol, Tennessee, and Chemical Engineering at University of Tennessee. Taught Safety and Fire Protection Engineering at Alabama Polytechnic Institute (now Auburn University). Hobbies: water skiing and refinishing antique furniture. Married, has one son and two grandchildren residing in Denver, Colorado.

William T. Fine
Chief, Safety Department
Naval Ordnance Laboratory
Silver Spring, Maryland



William T. Fine graduated from Cornell University in 1940 with the degree of Mechanical Engineer. He served in the Army throughout WW II in several posts in the United States and the Far East. After the war, he worked for the State of New York as a Safety Engineer, and as an Industrial Hygiene Engineer. In 1950, he was honored by being selected for the Conference Award of the Central New York Safety Conference and Exposition for his outstanding contributions to safety. Called back to active Army duty for the Korean War in 1950, he served in Korea and Japan for four years, his principal job being that of Safety Officer for the Japan Ordnance Command. After further Army duty in the United States and Europe, he retired from the Army in 1966 with the rank of Lt. Colonel, his final Army assignment being Deputy Commander of the Aberdeen Proving Ground. He then started

in Civil Service as a Safety Engineer at Aberdeen Proving Ground and soon went to his present position as Head of the Safety Department at the Naval Ordnance Laboratory in Silver Spring, Maryland.

Over the past 25 years he has developed many unique safety programs and authored publications and feature newspaper articles on safety. Two years ago Fine was honored by being presented the National Safety Council's Public Service Award "for the most significant and distinguished contribution to accident prevention by an individual or group during the year 1968." The basis of this award was his "Sing for Safety" program which is still receiving national attention. Fine is also an inventor, having developed several safety devices for the automotive industry.



Mr. Forrest S. Forbes

Mr. Forrest S. Forbes is Chief of the Liquid Propellant Section, Air Force Rocket Propulsion Laboratory.

Born in Casper, Wyoming, he resided in the Netherlands Antilles, Iowa, and Ohio before coming to California. He received his BS in Chemical Engineering from the University of Iowa. He also attended the Executive Development Course at Texas A & M University.

Mr. Forbes began his career at the Power Plant Laboratory, Wright Air Development Center, Wright-Patterson AFB, Ohio. There he conducted laboratory studies on propellant properties and compatibility and defined requirements for military propellant specifications. Transferred to the Air Force Rocket Propulsion Laboratory, Edwards, California, in 1959,

Mr. Forbes served as Senior Project Engineer. He managed the liquid oxidizer research, development and evaluation programs, including the effort that resulted in the development of chlorine pentafluoride.

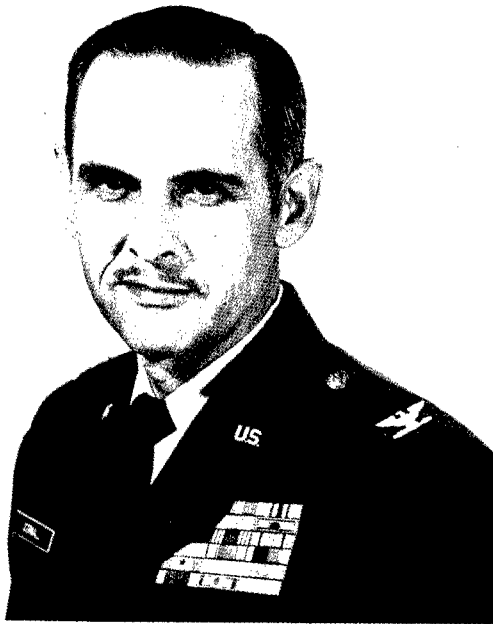
Mr. Forbes has been an advisor to the Air Materiel Command on rocket propellant storage and handling and provided the technical inputs for the 42-B series Technical Orders. He served as a consultant to the Armed Services Explosives Safety Board, and in 1958 prepared the first comprehensive review of missile blast hazards. He was one of the initiators and a past chairman of the JANNAF Monopropellant Test Methods Committee (now the ICRPG Test Methods Working Group). He was Vice Chairman of the Working Group on Safety Regulations for Liquid Propellants, Office of the Director of Defense Research and Engineering. This group prepared the manual The Handling and Storage of Liquid Propellants, which was subsequently issued as AFM 160-39. This effort was continued by the ICRPG Hazards Working Group, of which Mr. Forbes was Chairman for two years.

He has presented a number of papers on rocket propellants at various symposia and meetings.

Memberships:

American Chemical Society
American Institute of Aeronautics & Astronautics (Associate Fellow)

COL John L. Gornall, USAF
Air Force Member, ASESB



A native of Ironton, Ohio, worked for the Lawrence County Highway Department in 1941, enlisted in the Air Corps 31 January 1942, and was commissioned a 2d Lt, Ord Dept, 3 October 1942. After air ordnance assignments in Tenn. and Fla., he reported to duty as Ordnance Officer, V Bomber Command, Johnson AB, Japan in late 1945, and reverted to inactive status in December 1946. He returned to active duty in September 1948 as the Ordnance Officer, 19th Bomb Wing, Andersen AFB, Guam and served as Gp Asst S-4 and Group Ord/Armament Officer on Okinawa from June 1950 to May 1951. He served at Field Command, DASA, 1952-1955, and later a tour in Operations at USAF Hq, Pentagon, 1955-1958. This was followed by munitions assignments with the USAF Inspector General, Norton AFB 1959-62; as the Dep Dir Munitions, USAFE, Germany, 1962-65; AF Mil Asst to the Secy Def, Atomic Energy (ATSD-AE) 1965-68; Chief, Munitions Test Div, Eglin AFB, Fla 1968-69; as Dir, Mission Analysis of Tactical Aerial Weaponry, Inglewood, CA

1970; and is now Chief, Explosives Safety Branch, Directorate of Aerospace Safety, USAF, Deputy Inspector General, Norton AFB, CA, and AF Member, Armed Services Explosives Safety Board. Service Schools: ORD OCS 1942; Electronics Fundamentals 1951; Nuclear Weapons 1952, '54, and '55; Air Command and Staff 1953; Air War College 1965 (Seminar - USAFE). Education: Marshall University, W. V. 1940; Univ Miss. 1951; Univ NMex 1952 and 1955; Univ Md 1956-58; and George Washington Univ 1958-59 (BA Bus Admin). Awards: Bronze Star; Joint Service Commendation and AF Commendation Medals; Pres Citation (W/OLC); Good Conduct, American Campaign, Asiatic Pacific, WW II Victory, Army Occupation, Korean Service, National Defense Service (W/OLC), and United Nations Service Medals; AF Longevity Service Award (W/Silver Star); Small Arms Expert Medal; and Republic of Korea Pres Unit Citation. Hobbies are golf and fishing.



Major General Erwin Montgomery Graham, Jr.
Commanding General
US Army Munitions Command
Dover, New Jersey

Erwin Montgomery Graham, Jr. was born 18 November 1917 at Pensacola, Florida. He was graduated from Central High School, Jackson, Mississippi. He took his bachelor of science in electrical engineering from Mississippi State University in 1938. He completed work and earned both the master of science and professional doctorate degrees in electrical engineering from the Massachusetts Institute of Technology in 1950.

General Graham has been associated with Ordnance since he entered active Army Service in 1941. From that year into 1942 he served as Deputy Director, Automotive Training in the Replacement Training Center at Aberdeen Proving Ground, Maryland.

During 1942 - 1943 he was Director of Automotive Training in the Ordnance Unit Training

Center at Flora, Mississippi. He moved overseas in January 1944 to Algeria where he served as Ordnance Officer of the Joint Rearmament Committee, which organized, equipped and trained the French Army in North Africa. Later that year he moved to France as a staff officer in G-4 of the Southern Line of Communications Headquarters at Dijon, France.

Early in 1945 he moved to the Supreme Headquarters, Allied Expeditionary Force Mission to France in Paris, where he was Chief of the US Equipment Group, Rearmament Division.

In 1947 he was once again in the United States, serving as Chief of the Instrument Laboratory at Aberdeen Proving Ground, Maryland. He was there until June 1948, when he went to the Massachusetts Institute of Technology for graduate studies.

After completing his academic work, he returned to Aberdeen in 1950 where he served as a staff officer at the Ordnance School. He became Chief of the Guided Missile Division of the Ordnance Training Command at Aberdeen in 1951 and moved to Redstone Arsenal in 1952 to establish what is now the US Army Missile and Munitions Center and School. He then was assigned to the Ordnance Officers Advanced Course at Aberdeen.

From 1953 through 1956 he was in Europe, serving first as Commanding Officer of the Ordnance Procurement Center in Oslo, Norway, then as Commanding Officer of the Ordnance Procurement Center in Paris, France. During 1956 -1957 he attended the Command and General Staff College at Fort Leavenworth, Kansas.

He returned to Redstone Arsenal in 1957 to become Chief of the Control Office of the Army Ordnance Missile Command. In the spring of 1961 he was a student at the Armed Forces Staff College, Norfolk, Virginia.

He went to Korea in August 1961 where he commanded the 74th Ordnance Battalion until April 1962. From there he was moved to Taegu, Korea and became Assistant Chief of Staff for Logistics of the 7th Logistical Command.

On his return to the United States in 1962 he became Chief of the Missile Branch in the Research and Development Directorate of the Army Materiel Command, Washington, DC until the summer of 1964 when he was assigned to the Naval War College at Newport, Rhode Island.

After completion of his studies there, he was assigned as Commandant of the US Army Missile and Munitions Center and School, Redstone Arsenal, Alabama in July 1965.

He returned to Aberdeen Proving Ground in August 1967 to command the Ordnance Center and School.

On 1 September 1967 he was promoted to the rank of Brigadier General and until June 1968 was Commanding General, US Army Ordnance Center and School.

In June 1968 he assumed command of the US Army Ammunition Procurement and Supply Agency in Joliet, Illinois.

On 1 February 1970 he assumed duties as Commanding General, US Army Munitions Command, Dover, New Jersey.



Chief Warrant Officer Bluford B. Graves
Edwards Air Force Base, CA.

Chief Warrant Officer Bluford B. Graves is Chief of Safety Operations and Inspections, Air Force Rocket Propulsion Laboratory (AFSC), Edwards Air Force Base, California. He has 15 years field experience as a fire protection officer, coupled with 10 years missile, industrial and explosive safety management. He served at Vandenberg as a Missile Launch Ground Safety Officer on 20 Titan and Minuteman ballistic missile and space vehicle launches. Also during this six year tour, 1962-1968 he served two years as the base ground safety officer. Prior to assignment with the laboratory he served as the Chief Safety Officer with Detachment 34, Minuteman Site Alteration Task Force responsible for insuring the safety standards and requirements were integrated into the Minuteman Update Programs. He is a graduate of the

Squadron Officer School, University of Southern California Missile Safety Officer School, Northwestern Traffic Safety School and Allan Hancock College. He has served with the Tactical Air Command, Strategic Air Command and Air Force System Command in the Pacific, Far East, Europe, Africa and Arctic Circle.



COL Harold F. Hardin, Jr., USA
Army Member, ASESB

HARDIN, Harold F., Jr. (Hal), Col., Ord C
492-26-5666

DOR: 10 March 1971

BORN: 14 October 1927, Kansas City Missouri

WIFE'S NAME: Doris Helen Ramalho (Doris)

CHILDREN: Lisa, 17; Michael, 16;
Catherine, 15; Patricia, 13.

EDUCATION

DATES	NAME & PLACE
1947-51	Loyola Univ, Los Angeles, CA
1961-62	Babson Inst, Wellesly Hills, Mass.

STUDIES

Hist
Ind Mgt

DEGREE

BS
MBA

CAREER HIGHLIGHTS

Dates	Position, Organization & Location
Mar 52-Aug 52	Plat Ldr, Hvy Wpns Co, 1st Inf, 6th Inf Div, Ft. Ord, Calif.
Apr 53-Jul 53	Plat Ldr, Co I, 3d Inf Bn, 31st Inf Regt, 7th Inf, Div, Korea
Jul 53-May 54	CO, Co I, 3d Inf Bn, 31st Inf Regt, 7th Inf Div, FECOM, Korea
Jan 55-Sep 55	Instr, Wpns Dept, The Infantry School Ft. Benning, GA
Apr 56-Sep 57	Special Wpns Officer, Killeen Base, Texas
Nov 58-Jul 59	Shop Off, Co A, 9th Ord Bn, USAREUR
Oct 59-Feb 60	CO, 23d Ord Co, 101st Ord Bn, USAREUR
Mar 60-Jul 60	CO, 525th Ord Co, 101st Ord Bn, USAREUR
Dec 62-May 64	Maint Off, Ord Off, HQ XVIII Abn Corps, Ft. Bragg, N. C.
Jul 64-Jun 65	G4 Advisor, 1st Vn Corps, Danang, South Vietnam
Jul 66-Jul 67	CO, 81st Maint Bn (Abn Div), 101st Abn Div, Ft. Campbell, KY
Aug 67-Jun 68	Student, Army War College, Carlisle Bks, PA
Jun 68-Jun 70	Staff Officer, OJCS, J-4, Washington, DC
Jul 70-Apr 71	CO, DISCOM, 2d Inf Div, Korea
May 7 -Present	Chief, Planning & Distribution Division, Directorate of Ammunition, ODCSLOG, Washington, DC

SERVICE SCHOOLS: Grad - NAWC C&S 66, AWC 68

INSTRUCTOR EXPERIENCE: Technique of Rifle Fire, Weapons Dept, The Infantry School, Jan 55-Sep 55.

SPECIAL QUALIFICATIONS: Special Weapons, Airborne

BATTLE CAMPAIGNS: Korea 2; Vietnam, 1

AWARDS: BSM W V & 3 OLC, ARCOMw/OLC, NUC, CIB, Senior Prcht Badge, Military Merit Medal (RVN)

PROFESSIONAL SOCIETIES: American Ordnance Assoc., Airborne, 101st Airborne Association.



Al Heeseman
Wyle Laboratories
El Segundo and Norco, CA.

Al Heeseman is Manager of Quality Control and Safety, Wyle Laboratories, El Segundo and Norco, California.

Mr. Heeseman has been active in the field of accident prevention and loss control over twenty years. His safety experience has been with organizations who conducted research, development, testing and production operations on chemicals, cryogenics, explosives, propellants and allied space activities. He is a graduate Chemical Engineer and holds a professional engineers' license in California.

Membership:

National Safety Council Executive Committee, Aerospace Section; American Institute of Aeronautics & Astronautics; American Chemical Society; System Safety Society.

Robert C. Herman
Safety Engineer, ASESB



A native of Arlington, Virginia, educated in public schools of Virginia. Attended Columbia Technical Institute and George Washington University in Washington, D. C. as well as Department of Defense schools and courses.

Mr. Herman has thirty years of Government service which began in the Office of the Secretary of War and includes forty months in the U. S. Coast Guard during WW II, serving in both the Continental United States and South Pacific areas. Upon receiving discharge from the USCG, became a member of the ASESB Secretariat on January 5, 1946.

During his tenure with the Explosives Safety Board he has been actively engaged in all aspects of the Board's activities including research, field testing, accident investigation, and field surveys of Army, Navy and Air Force installations worldwide. He has served as chairman of many ASESB work groups engaged in the development of DOD safety criteria.

Since 1957 he has served as the U. S. Delegate and at times Chairman of the NATO Group of Experts on the Safety Aspects of Transportation and Storage of Ammunition and Explosives. Explosives safety criteria developed by this Group have been accepted as the national standards of several European countries and is being studied by others.

Mr. Herman has served as the DOD Member on the U. S. Delegation to the United Nations Organization Group of Experts on the Transport of Dangerous Goods. The recommendations of this Group have been accepted as regulatory for the sea transport of dangerous goods by IMCO and will become effective in 1971.

COL Willard K. Hillyer, USAF
Alternate Air Force Member, ASES



Colonel Hillyer graduated from Carmel High School, Carmel-By-The-Sea, Calif. in 1943. Entered the U. S. Army Air Corps in 1943 and became a ball turret armorer gunner in B-24s. Following his discharge in 1945 he attended San Jose State College, receiving a BA in Business Admin. in 1948, and a Masters Degree in Business Education from Leland Stanford University in 1950. In July, 1950, he received a direct commission from the USAF and came on active duty November 1950. After finishing pilot training May 1952, COL Hillyer had the following assignments with commands and at the stations indicated: 1952 - B-29 Co-pilot, Randolph AFB, Texas; 1952-1958 - KC-97 Aircraft Commander, Instructor Pilot, Standardization pilot, MacDill AFB, Fla.; 1958-1961 - KC-97 Standardization Pilot, Flying Safety Officer, Kindley AB, Bermuda; 1961-1963 - Missile Safety Officer, Plattsburgh, N.Y.; 1964-1968 - Air Operations Officer, Joint Task Force Eight, (DASA) Washington DC/Sandia Base, N. M.; 1968-1969 - Depty Director Airlift Command Post, 834 AD, Vietnam; 1969-Present - Safety Staff Officer, Hq USAF, IGDA, Pentagon.

Colonel Hillyer has been associated with some facet of nuclear munitions since 1953. His non-nuclear munitions experience dates from 1944, with the most recent field experience being in Vietnam where he supervised the airlift of conventional munitions. Colonel Hillyer's awards include: Bronze Star Medal, Joint Commendation Medal, Air Force Commendation Medal, Unit Presidential Citation with two Bronze Stars, American Defense Medal, WW II Victory Medal, Vietnam Campaign Medal. Colonel Hillyer is the Air Force Liaison Officer to the American Ordnance Association, Executive Safety Board, and Alternate Air Force Member of the Armed Services Explosives Safety Board. Colonel Hillyer is married and has three children. Hobbies are golf, gardening, and cooking.



Christopher P. Hontgas

Mr. Hontgas is Head of section engaged in Environmental testing of Ordnance. (Test and Evaluation Department). He is senior project engineer, Naval Weapons Laboratory Dahlgren, Virginia.

Mr. Hontgas attended West Virginia Institute of Technology. Graduated in 1966 with BS in Electrical Engineering. Graduate work with American University and Oklahoma University. He has published and presented papers on "Hazards of RF Radiation on 2.75" rocket launchers," "Weapon Survivability in Fire Testing" and "Rocket Motor Survivability in Fire."

M. C. Hudson
Naval Ordnance Station
Indian Head, Maryland



Mr. Hudson graduated from Missouri School of Mines and Metallurgy in 1958 with a B. S. in Physics. He has worked for seven years in project engineering of propulsion systems, liquid and solid research and development. For the past four years, he has worked in the Naval Ordnance Station Safety Department in hazards characterization of new propellants and propellant processes.



Kenneth Kaplan
Vice President
Director, Engineering Research Division
URS Research Company

Specilized professional competence: Program Development and management in the field of fluid dynamics. Shock and water wave phenomena and effects. Hydromechanical transmission analysis.

Representative research assignments: Investigation of the influence of complex structural environments on air shock loading of structures, and the production of structural damage and debris by air blast and fire. Analyses of fundamental air shock generation, propagation, and interaction problems. Studies of the basic mechanisms in the generation of water surface waves by explosive energy releases and by the wind. Study of the stress wave propagation and energy loss in soils. Development of instrumentation

for measuring shock wave overpressures, shock-induced forces, and the dynamic pressures within shock waves. Evaluation of the hazards of large nuclear power reactor operation and development means of reducing these hazards. Studies and field experiments of air shock effects on forests. Design and development of techniques for water surface wave forecasting. Analysis of shore protection problems and design of shore protective structures. Development of techniques for wave damage prediction and breakwater design. Development of computer programs for the analysis of hydrostatic and hydromechanical transmissions. Consultant to the Department of Defense agencies on explosive generated shock and fluid dynamics phenomena.

Other professional and business experience

Director of Planning, URS Systems Corporation
Research Engineer, Beach Erosion Board, Corps of Engineers, Department of the Army,
Washington, D. C.
Hydraulic and Civil Engineer, San Francisco District, Corps of Engineers.

Academic background

B.S. degree (1949) in engineering physics, University of California, Berkeley.
Graduate studies in mathematics (1949-50), University of California, Berkeley.

(Continued)

Kenneth Kaplan

Selected publications

Analysis of Moving Fetches in Wave Forecasting, Tech. Memo No. 37, U.S. Corps of Engineers, Beach Erosion Board, USCE, 1954.

"Design Problems Involved in Protection From Tsunamis," Journal of the Waterways and Harbor Division of the ASCE, Vol. 82, No. WW 3, Paper 968, May 1956.

Vessel Rupture and Missile Shielding Analysis, Dresden Reactor, BRD-57-1J1, for General Electric Company, Atomic Power Equipment Department, by Broadview Research and Development, Burlingame, California, January 1957.*

"The Shock Chamber: A Device for Producing High Strength, Spherically Expanding Shock Waves," Proceedings of the Third Shock Tube Symposium, Air Force Special Weapons Center, Kirtland Air Force Base, New Mexico, March 1959.*

"A Device for Determining Dynamic Stress-Strain Relationships of Soils," Symposium on Shock, Vibration and Associated Environments, Bulletin No. 29, Office of the Secretary of Defense, Research and Engineering, Washington, D.C., March 1961.*

"Development of a Miniature Dynamic Pressure Gauge," Proceedings of the Fourth Shock Tube Symposium, Ballistic Research Laboratories, Aberdeen Proving Ground, Maryland, April 1961.

Experimental Study of the Effect of Material Properties on Coupling of Explosion Energy, AFSWC-TDR 63 17, URS 609-11, Air Force Special Weapons Center by United Research Services, Burlingame, California, May 1963 (AD 423 739).

Air Blast Loading in the High Shock Strength Region, Part I - Analysis and Correlation, Part II - Prediction Methods and Examples, URS 633-3, DASA 1460, Defense Atomic Support Agency, Contract No. DA-49-146-XZ-209, by URS Corporation, Burlingame, California, March 1965 (S).*

Preliminary Investigation of Pulse Shapes from a Near-Simultaneous Detonation of Two High-Explosive Charges in a Barricaded Enclosure, URS 649A-1, DASA, Defense Atomic Support Agency, Contract No. DA-49-146-XZ-349, by URS Corporation, Burlingame, California, April 1966.

Techniques for Predicting the Effects of Topography on Air Blast in Real Terrain, URS 649-7, Defense Atomic Support Agency, Contract No. DA-49-146-XZ-349, by URS Corporation, Burlingame, California, January, 1967.

"Variable Ratios from Planetaries," Machine Design, August 17, 1967.

Effectiveness of Barricades: Review of Basic Information, URS 677-4R, DASA 2014, Defense Atomic Support Agency, Contract No. DASA-01-67-C-0046 by URS Systems Corporation, Burlingame, Calif., June 1968.*

"Startup and Regeneration Problems in Hydromechanical Transmissions", Society of Automotive Engineers Paper 68064, presented at SAE Combined Farm Construction and Industrial Machinery, Power Plant, and Transportation Meetings, Milwaukee, Wisconsin, Sept. 9-12, 1968.

Romie H. Kieke



B.S. Degree, Southwest Texas State College majoring in biology, minor in mathematics and English; postgraduate St. Mary's University, Texas in chemistry. Service schools: Ammunition Inspector's School, Delaware Ord Depot; Air Weapons Course, Lowry AFB; Ballistic Missile Staff Familiarization Course, Vandenberg AFB; Nuclear Weapons Advanced Course, Sandia Base; and various other Service schools.

Biology Instructor for 1 year, Southwest Texas State College; elementary teacher for 6 years, Texas public schools; 5 years as an Ammunition Inspector with the Department of the Air Force; 17 years Chief of Explosives Munition Section, SAC; and the last 7 years with the Explosives Safety Board. Duties with the ASESB include: conducts research, studies and writes DOD Explosives Safety Standards; evaluates site plans; conducts surveys; and acts as a consultant and advisor on explosives safety.

Awards include: three Outstanding Performance Ratings, Sustained Superior Performance Award, and Decoration for Exceptional Service (the highest award that can be given by the Department's Secretaries).

Hobbies are wood carving and all types of woodworking, camping, fishing, and all outdoor activities.

LCDR James N. Kindig
Naval Air Systems Command



LCDR Kindig is attached to the Armament Division, Naval Air Systems Command and is the Coordinator for the Naval Weapons Cook-Off Program.

LCDR Kindig has a B.S. in Chemistry, Ohio State University; M.S., Materials Science, U.S. Naval Post-graduate School. He has served with Patrol Squadron Forty-Two (VP-42) and Antarctic Development Squadron Six (VXE-6).

Beryl L. Knasel



Bachelor of Science Degree, 1938, Major Chemistry, Minors, Mathematics and Physics. Military Service: U. S. Navy, 1943-1946, Gunnery Officer, Navigator, Senior Watch Officer, and Executive Officer of the USS VIGILANCE (AM 324); U. S. Navy, 1951-1954, Director of Safety, Explosives Safety Officer and Officer in Charge of the Fire Department of the U. S. Naval Weapons Station, Yorktown, Virginia. Job Experience: 1964-Present, ASESB Secretariat; 1962-1964, Supervisory General Engineer, U. S. Naval Ordnance Station, Indian Head, Md. (Director of Safety); 1954-1961, Safety Engineer, Director of Safety of the U. S. Naval Weapons Station, Yorktown, Va.; 1951-1954, Military Duty, Director of Safety, U. S. Naval Weapons Station, Yorktown, Va.; 1946-1951, Safety Engineer, Director of Safety at the U.S. Army Ammunition Plant, Charlestown, Indiana; 1943-1946, Military Duty (USS VIGILANCE); 1941-1943, Ammunition Inspector and Safety Inspector, U. S. Army Ammunition Plant, Charlestown, Ind.; 1940-1941, Research Chemist; 1938-1940, Supervisor in Training Program, Sales. Hobbies: Golf and fishing.

John N. Komos
Chief Safety Engineer
Concept Development and Safety Division
Quality Assurance, Defense Contract Admin Svc
Alexandria, Virginia



Mr. Komos is the Safety Engineer for the Defense Contract Administration Services, Cameron Station, Alexandria, Virginia. He assumed this position during February of this year. Prior to that, he served for five years as the Safety Engineer for the Defense Contract Administration Services Regional Office in St. Louis, Mo. Mr. Komos also spent five years as a Construction/Safety Engineer with the U. S. Army Corps of Engineers. He is a graduate of Washington University, St. Louis, Mo., where he received a BS in Civil Engineering in June 1961. Prior to that he served five years in the U. S. Army as a commissioned officer in the Corps of Engineers.

Daniel Lafleur
Naval Ordnance Station
Indian Head, Maryland



Mr. Lafleur received a B.S. in Chemical Engineering from the University of Southwestern Louisiana. Worked six years as a project engineer in the production of various solid propellant rockets and gas generators. The last two years have been spent working on the development of improved solid propellants for applications in rockets, gas generators and guns.



LTC Robert L. LaFrenz
Army Engineer Explosive Excavation Research
Livermore, California

Lieutenant Colonel Robert L. LaFrenz is the Director of the US Army Engineer Excavation Research Office located at Livermore, California. His military schooling includes the Airborne and Ranger Courses at Fort Benning and the Engineer Officer's Basic and Advanced Courses at Belvoir. He is a 1969 graduate of the Command and General Staff College at Fort Leavenworth. His troop assignments include duty with 317th Engineer Battalion (Combat) in Germany; 547th Engineer Float Bridge Company in Korea; and Engineer Section, First Field Forces, Vietnam. He served at the United States Military Academy, West Point, as an Instructor in the Department of Electricity from 1963 to 1965 and as an Assistant Professor in the Physics Department from 1965 to 1967.

He was a Deputy Director and Director of the Nuclear Catering Group prior to its conversion to the Explosive Excavation Research Office, an activity of the Waterways Experiment Station. Colonel LaFrenz graduated from West Point in 1955 and entered graduate school at Iowa State University, Ames, Iowa in 1959 where he received his Master of Science Degree and Doctorate of Philosophy. His major area of study for his PhD was Civil Engineer with research in water filtration. Minor areas of study were Nuclear Engineering and Nuclear Science. He is a Registered Professional Engineer in Civil and Sanitary Engineering.

Richard A. N. Larson
Naval Missile Center
Point Mugu, California 93041



Mr. Richard A. N. Larson received a BSAE Degree from California Polytechnic College at San Luis Obispo in 1964. His work at the Naval Weapons Center, China Lake, CA. during the 1964-1968 period encompassed warhead design, development and qualification testing, explosive devices and Fleet support effort. In mid 1968, he transferred to the Naval Missile Center, Point Mugu, California, and assumed project engineer duties for inservice rocket warheads. In 1969, Mr. Larson was assigned Bomb Program Manager task for the Navys' cook-off program. He now heads the Bombs Branch responsible for inservice Conventional Bombs and Associated Components.



CDR Charles V. Lavin, USN
Director of Operations, ASESBS Secretariat

Commander Lavin, a native of Buffalo, New York was graduated from the U. S. Naval Academy at Annapolis in 1952. Subsequent to graduation he was commissioned as Ensign and served in USS LAKE CHAMPLAIN (CVA 39) as Assistant Navigator. From there, he was ordered to USS RICH (DD 820), where he served in the Operations Dept. until April 1955, when he reported to Commander, Destroyer Division 342 for duty as Division Operations Officer. He then became Commanding Officer of USS CHADRON (PC 564). He remained in CHADRON for thirty months and then became Flag Secretary and Aide to Commander, Cruiser Division ONE. Following this tour, he spent two years at Yale University in the NROTC Unit. From Yale, he was ordered to Executive Officer, USS MASSEY (DD 788). This tour was followed by a year at the Naval War College in Newport, R. I. as a student and then two years on the War College staff in the War Gaming Department. Following duty at the War College, Commander Lavin became Executive

Officer of USS CASCADE (AD 16). After a year and a half in CASCADE, he assumed command of USS ENGLISH (DD 696) on January 7, 1969. He received a Master's Degree in International Affairs on 22 February 1969 from George Washington University.

Commander Lavin is married to former Barbara Hofheins, also of Buffalo, New York. They have one daughter, Laurel, and three sons, Michael, Peter and Robert.

William H. Lawrence
Air Force Rocket Propulsion Laboratory



William H. Lawrence, GS-15, is the Assistant Chief of the Liquid Rocket Division, Air Force Rocket Propulsion Laboratory, and shares in the direction of in-house and contracted Exploratory and Advanced Development of liquid rocket propulsion systems ranging from the satellite associated millipond thrusters up to the advanced development of main engines for space shuttle applications. Prior experience includes directing the Facility and Technical Support Division of the Air Force Rocket Propulsion Laboratory from 1961 to 1969, the period in which most of the 130-million dollars of laboratory facilities were planned, constructed and activated. Incidentally, he served as the Chairman of the Ad Hoc NASA/DOD Hazards Analysis Board which delineated the operational hazards and

defined the siting criteria for the Manned Lunar Launch Site at Cape Kennedy in 1961. Military service includes a tour in the Navy as an electronic technician during World War II and a tour in the Army as an Ordnance Officer during the Korean War. Education includes a BS degree in Mechanical Engineering, Purdue University, 1950 and a Masters degree in Business Administration, 1955.

John W. Lowell



Mr. Lowell came to the Armed Services Explosives Safety Board from the Army in January 1952, where he had practiced explosives safety in a production plant (TNT manufacturing), a field agency (OAC) and at Ordnance Headquarters (OCO). His initial assignment with the Board was the review of site plans for new construction and to coordinate transportation problems with the DOD and the Services.

Mr. Lowell was assigned in August 1955 to survey, study and evaluate Army, Navy and Air Force activities to determine compliance with ammunition and explosives safety standards and to detect conditions which could result in loss of life or damage to property within and outside installations. This has been his primary responsibility since that date.

Mr. Lowell attended the University of Notre Dame for five years, receiving a Bachelor of Science degree in Civil Engineering at the end of the fourth year. In 1938 a one-year fellowship to Yale University permitted the completion of courses for a Masters Degree in Engineering. His career in explosives safety extends over a 28-year period.

Beverly J. Mast
Secretary to the Chairman, ASESB



A native of Washington, D. C., educated in Maryland schools and the Washington School for Secretaries. Joined the ASESB Secretariat in 1949 and has been Secretary to the Chairman, ASESB since 1951. Recipient of ten Outstanding Performance Awards. An avid outdoorswoman, skilled in needlework, and interested in travel.

P. R. Mosher
Naval Ordnance Station
Indian Head, Maryland



Mr. Mosher is currently a pilot plant chemical engineer at the Naval Ordnance Station at Indian Head, employed in the field of rocket fuels and high explosives. He majored in chemical engineering at college, getting degrees at CCNY and at Columbia. He also attended graduate school at the University of Delaware and George Washington University, majoring in chemistry. He has authored several patents and papers in the course of his career. He has had plant experience at General Motors and General Chemical, has been a research chemist at Hercules, and a R & D explosives engineer for the Navy.

Ray L. Myers
Director, US Army Materiel Command Field
Safety Agency, Charlestown, Indiana
47111



Mr. Myers was assigned Director of the US Army Materiel Command Field Safety Agency, August 1963. The mission of the Director, USAMC Field Safety Agency, is to perform Safety engineering services, program evaluations, investigations and safety training including the Safety Engineering Graduate Training Program in the implementation of the US Army Materiel Command Safety Program. Prior to this assignment he was Assistant Chief, Survey and Accident Investigation Branch, HQ. AMC, Safety Office.

Mr. Meyers' earlier assignments included such positions as Deputy Chief, Inspection Division, US Army Ordnance Field Safety Agency; Deputy Chief and later, Chief, Surveillance Division, Letterkenny Army Depot; and, Chief Safety and Surveillance Office, Ordnance Corps (Philippine Islands).

Mr. Myers received a Bachelor of Science Degree at Shippensburg State College, PA, studied Safety Engineering at New York University and performed graduate work at University of Louisville and Indiana University. He has undertaken several courses covering managerial and technical subject matter through his attendance to many Army Service Schools

He is a recipient of the Honorary Meritorious Civilian Service Award, two Sustained Superior Performance Awards, and recently the highest Incentive Award for Federal Service Personnel, an Outstanding Performance Rating.

Mr. Myers is a member of the American Society of Safety Engineers, a member of the System Safety Society, and is a Certified Safety Professional. Mr. Myers has as hobbies, hunting, fishing, and gun collecting. He is very active in Boy Scout work, with 20 years of service in many capacities with scouting activities. Presently, he is President of the George Rogers Clark Area Council, Boy Scouts of America, Southern Indiana.



Brigadier General Robin Olds
Headquarters, U. S. Air Force

Brigadier General Robin Olds is the Director of Aerospace Safety in the Office of the Deputy Inspector General for Inspection and Safety, Headquarters United States Air Force, at Norton Air Force Base, San Bernardino, California.

He assumed the Pentagon-level position on February 1, 1971, following 38 months as Commandant of Cadets at the Air Force Academy, Colorado Springs, Colorado.

General Olds has supervisory responsibilities for the development and implementation of policies, standards, and procedures for Air Force flight, ground, missile, space, explosives, and system safety engineering programs. His directorate's mission is to help conserve the nation's aerospace resources by preventing and reducing acci-

dents through worldwide programs of safety education, accident investigation and analysis, and safety inspections.

He was born July 14, 1922, in Honolulu, Hawaii, the son of Army Air Corps Major General and Mrs. Robert Olds. He spent his boyhood days in the Hampton, Virginia area and attended elementary and high school there. He was graduated from the U. S. Military Academy and commissioned as a second lieutenant on June 1, 1943. He was an All-American tackle on West Point's 1942 football team.

A veteran fighter pilot, General Olds is rated a triple ace, having shot down a total of 17 enemy aircraft during World War II and the Vietnam conflict. His record of four MIG "kills" over North Vietnam is the highest number to date in that war.

Following completion of pilot training in 1943, he was assigned to the European Theater of Operations where he flew 107 combat missions in P-51 and P-38 fighter aircraft. He is credited with downing 13 enemy planes and destroying 11 aircraft on the ground during World War II. He served as a flight commander, operations officer and squadron commander. In March 1945 he became Commander of the 434th Fighter Squadron, 479th Fighter Group at Wattisham, England.

General Olds began his wartime flying in a Lockheed P-38 Lightning named "Scat I". At the end of World War II, 107 missions and 24.5 official victories later, his North American P-51 Mustang was "Scat VII".

Jack M. Pakulak, Jr.
Naval Weapons Center
China Lake, California



Mr. Pakulak became associated with the Naval Weapons Center in 1952 after completing studies in chemistry for a B. A. Degree from Linfield College, McMinnville, Oregon. He later returned to college and received an M. S. Degree in Analytical Chemistry from Oregon State University in 1958.

He is responsible for the planning and supervision of work in the thermal behavior of explosives, propellants and related materials. He is also responsible for conducting applied and basic research in the area of improving the chemical and thermal stability of explosives and propellants. He has some 24 publications in the field of thermal stability, one patent and one patent pending.

Albert J. Palfey
Dow Chemical Company
Midland, Michigan



Mr. Palfey is a Senior Research Engineer in The Dow Chemical Company, Construction Materials Research and Development Laboratory, Midland, Michigan. A 1948 graduate of Indiana Technical Institute with a degree in Mechanical Engineering. An employee of Dow since 1935 (with interrupted tenure to spend 4.5 years in the U. S. Army as Chief Warrant Officer in the 3rd Armored Division).

After returning to Dow, he engaged in production development engineering for chemical processes and equipment development for plastics processing and fabrication. Most of this time in later years has been directed specifically to design and application of plastic foam cored sandwich panels for environmental control, including containerization. Mr. Palfey was responsible for the design and development of 60 and 400 cu. ft. insulated cargo containers for the U. S. Air Force 463L System. His most

recent projects include development of sandwich panel intermodal cargo containers, 8' x 8' x 20' to ISO specifications for the U. S. Army Mobility Equipment Research and Development Center and the U. S. Air Force.

Russel G. Perkins



After graduation from Washington State University (Pullman) in June 1941 with a Bachelor of Science Degree in Metallurgical Engineering, Mr. Perkins entered the Federal Civil Service as an examiner for the Civil Service Commission.

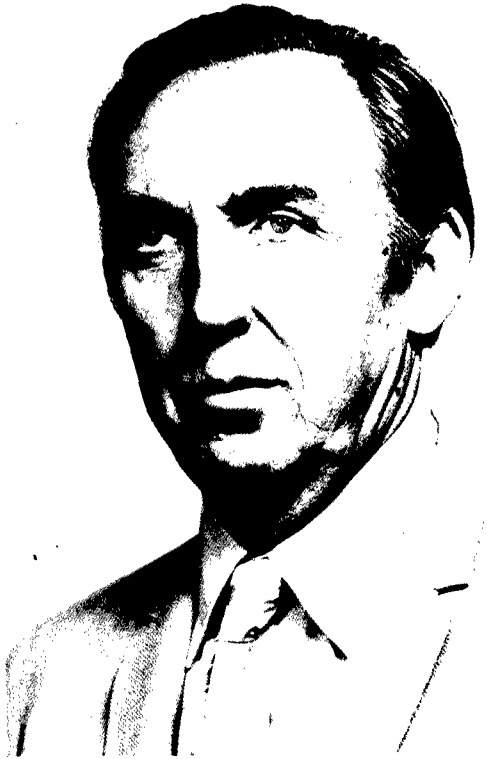
Starting with a transfer to the Bureau of Ordnance in 1942, he has been engaged in explosives and ammunition safety positions continuously. He transferred to the Secretariat of the Board in 1946.

Mr. Perkins has been actively engaged in all phases of the Board's activities including explosives safety surveys of military installations, participation in activities of the Plutonium Safety Working Group of DNA (formerly DASA), and extensive test and evaluation programs on development of new standards for protective construction, weapon sensitivity, explosion communication, etc. Present duties are to perform research, analysis,

contract monitoring and review of test and accident data for the establishment of new or revision of existing explosives safety standards.

He has been the recipient of numerous outstanding performance and quality increase incentive awards and the Department of the Army Decoration for Meritorious Civilian Service for his work with the Board.

Joseph Petes
Division Chief
Air/Ground Explosions Div.
Naval Ordnance Laboratory
Silver Spring, Maryland



City College of New York, 1939; Instructor in Radio Communications, Army Air Corps Tech. Training Command, 1942-1943, Fire Control and Research Officer, USNR, 1943-1946; Electronic Engineer and Physicist in Underwater Shockwave and Airblast Divisions, Naval Ordnance Laboratory, Silver Spring, Md., 1946-1965; Division Chief, Air/Ground Explosions Division, 1965 to present.

Participated in Nuclear Weapons Tests Operations as member of Instrumentation Group, Group Leader, Project Officer, Official Observer, and Assistant Technical Director for Blast and Shock.

Currently, member of the following national and international groups dealing with high explosive and nuclear weapon blast and shock:

Nuclear Warfare Technical Area Working Group IV Shock Blast and Thermal Research; The Technical Cooperation Program; JANNAF Interagency Propulsion Committee (Hazards Working Group); JTCG/ALNNO Working Party for Explosives (Airblast Subgroup).



Lawrence F. Regan
Attorney Advisor
HQ, US Army Materiel Command
Washington, D.C. 20315

Lawrence F. Regan, born 24 February 1917, in Boston, Massachusetts, attended Boston University (B.S. 1939) and Boston University Law School (LLB 1948).

Pre-World War II he was a newspaper reporter for the since defunct Boston Post. He served two tours of duty in the US Marine Corps, 1941 - 1946 and 1950 - 1952 with extensive Pacific theater area duty in World War II.

In private practice in Foxboro, Massachusetts, during 1948 - 1950, he accepted an appointment in 1950 as attorney in the US Department of Justice, Washington, DC, where he was employed until 1955 when he transferred to the then Department of the Army Ordnance

General Counsel's Office.

Since 1955 in Ordnance and more latterly in AMC he has been house counsel to AMC Safety, Security, and Personnel directorates.

Mr. Regan's services have been commended numerous times. Married to the former Jean Elizabeth Winter, sometime confidential assistant to the US Assistant Attorney General, he is the father of two sons and two daughters. A Past President of the Rock Creek Palisades Citizens Association, he is active in the Boy Scout movement and is President of the US Army Materiel Command Federal Credit Union.



William F. Reed
CAPT, USN

Captain Reed graduated from the Naval Academy with the class of 1948 and was commissioned in the Civil Engineer Corps. Subsequently he received a degree in civil engineering from Rennselaer Polytechnic and a Master of Science in Management from the Naval Postgraduate School. Since then his billets have been in the engineering and management fields. Among them have been three years in the then Bureau of Yards and Docks as project manager for classified projects and work on the construction of U.S. Air Bases in Spain where he was responsible for organizing a cost control branch and was the Deputy Resident Officer in Charge of Construction for the area of Central Spain. After tours as Assistant Public Works Officer at the Naval Station Pensacola, Florida and at the Postgraduate School, he became the Officer

in Charge of the Western Pacific Detachment of Amphibious Construction Battalion One. He then moved to Fleet Activities Yokosuka and became its first executive officer. From 1965 - 1967 he was the acquisition officer of the Chesapeake Division of the Naval Facilities Command. In this position he was responsible for the design, construction and contracting for Navy and Air Force construction in the National Capital Region. More recently he was assigned as executive officer of the Public Works Department of the Naval Support Activity Danang, RVN where he was in charge of the day to day direction of a force of 6,000 men responsible for the engineering support of the Free World Forces in the I Corps Tactical Zone. Returning to the U. S., he served as Assistant Commander for Operations and Maintenance of the Naval Facilities Engineering Command and then as a staff assistant in the Office of the Deputy Assistant Secretary of Defense (I&H). His present duty is in the Office of the Oceanographer of the Navy as Assistant Chief of Staff for Environmental Quality. Captain Reed holds the Bronze Star with Combat V, the Meritorious Service Medal, Joint Services Commendation Medal and the Naval Unit Commendation Ribbon. He is a member of the Society of American Military Engineers and the Marine Technology Society.

Dr. Donald R. Richmond
Lovelace Foundation for
Medical Education & Research
Albuquerque, New Mexico



Native of South Amboy, New Jersey. B. A., 1950, Montclair State Teachers College; M. S., 1952; Ph. D., 1955, University of New Mexico. Graduate and Teaching Assistant, Biology Department, University of New Mexico, September 1950 to August 1954. Staff, Department of Physiology, Lovelace Foundation for Medical Education and Research, 1954 to 1959. Head, Department of Comparative Environmental Biology, Lovelace Foundation for Medical Education and Research, 1959 to present.

Member: Phi Sigma, Sigma Xi, American Association for the Advancement of Science, American Ordnance Association, New Mexico Society for Biological and Medical Research, New York Academy of Sciences.



John Robert Roach
Naval Ammunition Production Engineering
Center
Crane, Indiana

Mr. Roach received B.S.M.E. (Heat Transfer Option) in 1963 from General Motors Institute in Flint, Michigan. During his co-op education worked with both the Fabricast and Central Foundry Divisions of GMC in various positions involved with tool and process engineering.

Mr. Roach began his civil service career in 1966 with the Weapons Production Engineering Center (WPEC), presently (NAPEC), in the Equipment Engineering section of the Equipment and Facilities Division, as a project engineer. He initially worked on such project as: development of production equipment for loading of 20mm ammunition, low drag bomb production equipment and cast loaded bomblet production equipment. Mr. Roach

served as Branch Manager of The Equipment Engineering Branch, Facilities and Equipment Division from 1968 until early 1971. During this period of time the Branch was responsible for the design, development, procurement, installation and checkout of both new and renovated production equipment and facilities for ordnance manufacture and assembly and the NAVORD field activities. Some of the programs undertaken and completed during period were: ROCKEYE at NAD Crane, MINOL bomb production at NAD Crane and NAD McAlester, FAE at NAD Hawthorne, 5" projectile loading and inspection equipment and ordnance production equipment and facility modernization.

Mr. Roach participated in the development of the NAVORD AEDA Demilitarization Disposal Program. Mr. Roach is located at NAPEC, Crane, Indiana, 47522. His code is ORD-04M/B/X1 and he can be reached by telephone at Area Code 812-854-2511 extension 1885. The AUTOVON number is 634-1601.



George S. Rogers
Head of Explosives Loading Engineering Div.

Mr. Rogers graduated from Columbia University Engineering School with a B.S. degree in Chemical Engineering. Previous to employment at the Naval Weapons Station at Yorktown, he worked for the Allied Chemical Company in R&D concerned with organic synthesis and separation-purification of organic chemicals from coal tar. He was also employed by the Flintkote Company.

Mr. Rogers' employment at the Naval Weapons Station has been in the field of processing and loading high explosives.

He is a member of the American Chemical Society and the American Ordnance Association and has served in the Loading Section, Bomb Warhead and Artillery Ammunition Division of the AOA.

Mr. Rogers is married and has two boys, one attending North Carolina University and the other about to enter college.



H. M. Roylance
Alternate Board Member, ASESB

Mr. Roylance received a Degree in Chemical Engineering from the University of Maine in 1934. After graduation he was employed in the Chemical Industry. He was commissioned in the Navy during World War II. At the conclusion of the War, stayed on as a civilian in the Bureau of Ordnance.

Mr. Roylance's Explosive Safety began in 1949. He transferred to the Armed Services Explosives Safety Board and stayed there for six years in the Survey Division. After this time he returned to the Navy in 1955 and is now the Director of the Safety Division in Naval Ordnance Systems Command.



Lippe D. Sadwin
Naval Ordnance Laboratory
Silver Spring, Maryland

Mr. Sadwin has had 12 years of experience in the field of explosives research and development and related disciplines. Since 1965, he has been employed as a Mechanical Engineer with the Naval Ordnance Laboratory's Air/Ground Explosions Division. He has held engineering positions in the past with the International Harvester Company, Armour Research Foundation (now IITRI), and the U. S. Bureau of Mines.

Mr. Sadwin received his Bachelor of Science degree in Mechanical Engineering at the Illinois Institute of Technology in 1958. His primary professional society affiliation is with the ASME.

Ralph A. Scott, Jr.



B. Sterling, Ill.; State of Illinois honorary fellow, B.S., U. Ill., 1952; Atomic Energy Commission Fellow, M.S. U. Okla., 1954; Atomic Energy Commission, National Science Foundation, and Texas Academy of Science Fellow, Ph.D., Texas A. & M. University 1957; M. Kathryn Louise Hartman, 27 Nov. 1959; c. Susan Irene, Craig Philip. Radiochemist, Okla. Res. Inst. 1952-1953; research plant breeder, W. Atlee Burpee Seed Co., Cal., 1954-1955; Prin. Research Chemist and Director Waste Evaluation Program, International Minerals & Chem. Corp., Fla., 1957-1958; Research Physiologist Olin Mathieson Chem. Corp., N.Y. 1958; Plant Physiologist Cotton Research Ctr., USDA Phoenix, 1958-1961; Sr. Research Plant Physiologist Boll Weevil Res. Lab., USDA, State Col., Miss., 1961-1962; Chief Chemist, U.S.A.F., Holloman, N.M., 1962-1965, Assoc. Professor Grad. Chemistry, Univ. New Mexico 1965, Alamogordo, N.M.; Sr. Chemist Adv. Test Tech., JCS, Deseret Test Ctr., Ft. Douglas, Utah, 1965-66. Chief Chemist, Dept. Public Health, Wash., D.C. 1966-67; Dir. Aquatic Plant Control Pgrm. Office Chief of Engineers,

USA, Wash., D.C. 1967-69; Special Consultant for Dept of State 1969 --; Chief Chemical Scientist, Armed Services Explosives Safety Board, 1969 --; conservation, residue analysis, ecological natural resource development, quality control and toxicology, carcinogenic chemicals mode of action, virological and microbiological chemistry. Fellow American Institute of Chemists 1968 --, Sigma Xi, Lambda Tau, Phi Sigma honoraries, personal representative Secretary of Defense on international classified mission 1970, two superior performance commendations 1970, patient awards; numerous patients in areas of chemical analytical instrumentation, agri. equipment, laser physics, custom pest control chemical systems and processes.

Robert F. Sellars
Martin Marietta Corporation
Orlando, Florida



Captain Robert F. Sellars, U. S. Navy (Retired) is a U. S. Naval Academy 1934 graduate. He served in submarines and was a guided missile specialist. His major commands were NOTS China Lake, USNWL Dahlgren, Va., USS NORTON SOUND, Escort Squadron 16 and Submarine Squadron ONE. He has been employed by the Martin Marietta Corporation, Orlando, Florida since 1964 in Ordnance and System Safety Engineering.



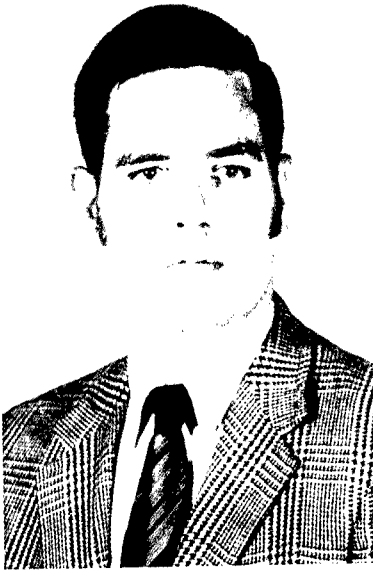
Edward J. Sheridan
Deputy Assistant Secretary of Defense
(Installations & Housing)

Deputy Assistant Secretary of Defense for Installations and Housing in the Office of the Assistant Secretary of Defense (Installations and Logistics), having primary responsibility for Department of Defense construction, real property management and maintenance, and military housing. Almost his entire career has been devoted to the administration of large Federal construction programs, principally in the field of Military Public Works. He was born in the State of New York and after completing public school courses, attended Fordham University in New York City for three years and Canisius College in Buffalo, New York, for one year, receiving his Bachelor of Science Degree from Canisius in 1933. He entered the Federal Service that same year, beginning his Government construction career with the Public Works Administration. Except for a brief period with the National Bituminous Coal Commission, he remained with the Public Works Administration from 1933 through 1940, occupying positions of progressive stature.

From 1940 until 1950 he was associated with the Corps of Engineers, U. S. Army, where his efforts played a vital part in the WW II construction program. He was commissioned as Captain in the Corps of Engineers in 1942 and received an honorable discharge in 1946 with the rank of Lt Colonel. While in the Service, he headed the administration by the Corps of Engineers of all construction work in the Continental United States for the Army Air Force. He began his association with the Department of Defense in 1950 when he became a member of the Defense Management Staff, eventually becoming Director of the Staff in 1952. He became attached to the Construction Staff within the Office of the Assistant Secretary of Defense (Properties & Installations), in November 1953 as Chief, Analysis and Review Division, later becoming Assistant Director of Construction. In 1956, he was appointed Director of Construction in the Office of the Assistant Secretary of Defense (Properties & Installations). Following appointment to his position as Deputy Assistant Secretary of Defense (P&I) in February 1961, Mr. Sheridan promoted improved management of the sizable Department of Defense real property plant, with emphasis on optimum utilization, base closures, and better and more efficient maintenance and operation. He has been instrumental in developing architect-engineer selection policies and procedures, and in furthering standardization of construction throughout the Defense establishment.

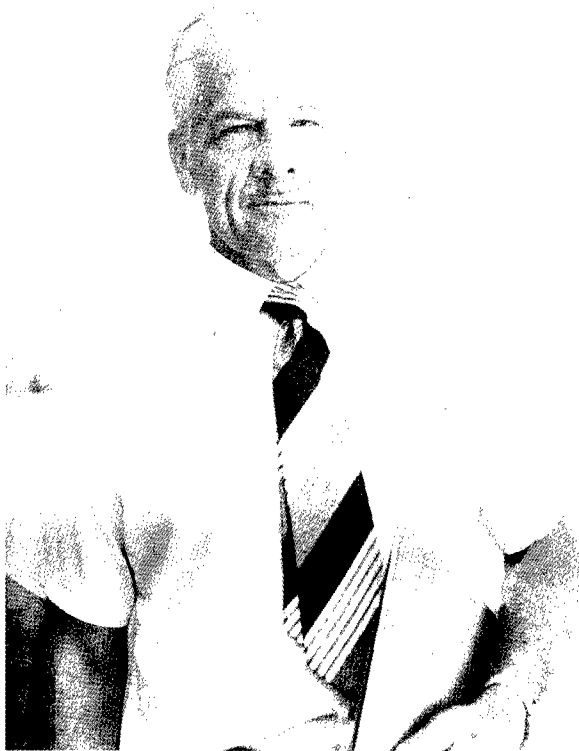
In May 1969, the Offices of the Deputy Assistant Secretary of Defense (Properties and Installations) and Deputy Assistant Secretary of Defense (Family Housing) were combined and Mr. Sheridan was designated Deputy Assistant Secretary of Defense (Installations and Housing).

Mr. Sheridan and his wife reside at 2711 Sycamore Street, Alexandria, Virginia. They have two sons and two daughters.



Richard W. Slyker
Naval Missile Center
Point Mugu, California 93041

Mr. Richard W. Slyker graduated from California State Polytechnic College, Pomona in 1968 with a Bachelor of Science Degree in Mechanical Engineering. He entered the Junior Professional Program at the Naval Missile Center, Point Mugu. Upon completion of the Junior Professional Program in 1969, he assumed in-service engineering responsibilities for Free Fall Conventional Ordnance and was assigned as the Assistant Program Manager of the Bomb Cook-Off Improvement Program. In March 1971, he was appointed Cook-Off Coordinator for the Naval Missile Center and Program Manager for the Bomb, Rocket, Missile and Aircraft Gun Cook-Off Programs.



F. H. Weals
Naval Weapons Center
China Lake, California

Mr. Weals has been employed by the Naval Weapons Center, China Lake, California, since 1953. He is presently the Head of the Projects Branch, Code 5721, at NWC. In this capacity he has been associated with a variety of range test work, including explosives hazards testing, for the past eleven years. He is a graduate of Ohio University and served in World War II as a Meteorological Officer.

CAPT J. D. Westervelt, USN
Navy Member, ASESBB

CAPT Westervelt is a native of Philadelphia, Pa. and was raised in Beverly, Mass. He received a B. S. in Chemistry in 1940 from Tufts University. Athletic letters in soccer, basketball. He was commissioned an Ensign in the Navy in 1941. Early duty mostly in minesweeping and related. Assigned to destroyer, USS McCARD (DD 822) in 1947 as Executive Officer. Back to minesweeping in Japanese waters in 1949-1950 clearing channels for use by reviving Japanese industry. Aide duties in 1951-1953 on staff of Commandant 5th Naval District. Command of destroyer USS PERRY (DD 883) 1953-1955. Naval Staff in Washington (mine warfare) 1955-1959. Head of Training, Fleet Training Group, San Diego, 1960-1962. Amphibious warfare assignments from 1962-1967 including COMLANSHIPFLOT ONE (all LST's in Pacific), C/S Amphibious Group THREE 1964-1965, and COMPHIBRON ONE, mostly in Vietnam, 1966-1967. Commanded first two U.S. assaults into the MeKong Delta.

Assigned to J-5 (Assistant Director, Strategic Division) of the Joint Staff in Washington, 1967-1970. Present billet - Assistant Director, Materiel Division of the Navy Logistic Staff, OP-41B. Sea duty includes seven commands at sea in minesweepers, destroyers, amphibious types.

Married in 1947 to a WAVE Lt. (j.g.) Barbara Jackson of LaGrange, Georgia. Daughter, Jan, 21, senior at American University in Washington, D. C. Son, John Christie, freshman at Georgia Tech.



H. M. White, 1st Lt., USAF

Lt White was graduated cum laude from Lehigh University in 1969 with a Bachelor of Science degree in Chemical Engineering.

He has been a Project Engineer in the Propulsion Sub-systems Branch of the Liquid Rocket Rocket Division of the Air Force Rocket Propulsion Laboratory since October 1969. At the Laboratory, Lt White is responsible for the areas of storability, pressurization and expulsion of liquid rocket propellants.

Thomas A. Zaker



BS, Civil Engineering, Case Institute of Technology, 1953; MS, Applied Mechanics, Illinois Institute of Technology, 1956; PhD, Applied Mechanics, Illinois Institute of Technology, 1967. Experience: 1970-present, Chief Explosives Scientist, ASESB; 1957-1970, IIT Research Institute, Chicago, Ill.: Science Adviser, explosives and nuclear reactor safety (1967-70), Section Manager, explosion mechanics (1961-67), Research Engineer, nuclear safety, weapons effects (1957-61); 1956-1957, McGeorge, Hargett & Associates, Cleveland, Ohio, Structural Engineer, frame analysis, process plant design; 1953-1956, Armour Research Foundation, Chicago, Ill., Asst. Engineer, structural mechanics, weapons effects. Awards: ARF Fellowship in Propulsion and Structures, 1953-55; Cady Staley Scholarship Award, 1950. Affiliations: Tau Beta Pi, Sigma Xi, American Ordnance Association.

Recent Publications: Dynamic Thermal Shock in Hollow Spheres, Q. Appl. Math. 26, 503-520 (1969);
Calculation of the Complementary Error Function of Complex Argument, J. Comp. Phys. 4, 427-430 (1969);
Far-Field Overpressure from Closely Spaced Sequential Detonations, Minutes, 11th ASESB Seminar (1969);
Effects of Tube Rupture in Sodium-Heated Steam Generator Units, Trans. ASME, Paper No. 69-WA/NE-18 (1969) (with coauthor);
Effect of Barricades on Blast Pressure Fields from Accidental Explosions, Proceedings, ICT Annual Meeting (1970);
Deformation of a Cylinder of Explosive Material in Unconfined Impact, Preprints, 5th Detonation Symposium (1970) (with coauthors).



Anchard F. Zeller
Headquarters, U. S. Air Force

Anchard F. Zeller, Ph.D., serves as a Staff Psychologist in the Life Sciences Group of the Directorate of Aerospace Safety, a Pentagon-level army of the Deputy Inspector General for Inspection and Safety, HQ, USAF, located at Norton AFB, San Bernardino, Calif. In this capacity, he acts as a psychological consultant to the various directorates, divisions, groups, and to the Deputy Inspector General.

He has prepared analytical evaluations of various aspects of the human factors problems as these relate to the safety program. The result of this effort has been more than 75 formal evaluations of a variety of facets of the human aspects of safety, many having been published in professional journals. A series of studies on age and experience as these relate to aircraft

accidents was published in the Journal of Aerospace Medicine as were evaluations of mid-air collisions, problems associated with ejections, and accidents related to instrument deficiencies. Others have been published in technical safety publications such as the Airline Pilot, Aerospace Safety, and Approach.

Dr. Zeller is a frequent speaker at conferences. He has been the technical advisor for a number of safety films, including the prize-winning "Man and Safety" series; the Air Force's multi-media, programmed learning, driver training program; and the prize-winning "Moods in Safety."

In 1965 he was presented the Raymond F. Longacre award by the Aerospace Medical Association for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine.

At the time of his employment by the Air Force in 1952, Dr. Zeller was an associate professor of psychology at the University of Tulsa. During his association with that university beginning in 1947, he participated extensively in community affairs, served as a consultant to the Juvenile Court, to the Crippled Children's Hospital, and was the first acting director of the Tulsa Child Guidance Clinic.

Prior to coming to Tulsa, he was a graduate student and junior instructor at Johns Hopkins University. Here he obtained his Ph.D. degree. His thesis, "An Experimental Analogue of Repression," was rewritten as a series of articles

for publication in the Psychological Bulletin and the Journal of Experimental Psychology. It has since been reproduced both in a standard reprint series and as a part of a text. It is often quoted as a classic example of an experimental approach to a relatively intangible clinical subject.

Before entering Johns Hopkins University, Dr. Zeller served as an instructor in both the mathematics and psychology departments of the University of New Mexico. It was here that he had obtained both his B.S. and M.A. degrees in 1941 and 1942 respectively.

Dr. Zeller is a member of several national honorary scholastic societies in a variety of fields; is a member of the American Psychological Association and the Aerospace Medical Association. He is a licensed psychologist in the State of California.

In 1943 he married the former Elizabeth Jean Uehren, a Phi Beta Kappa graduate of the University of Minnesota. They currently reside in Redlands, California, with their three daughters.